



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:

KHURI-YAKUB et al.

Serial No. 09/905,087

Filed: July 12, 2001

For: *Fluidic Device with Integrated Capacitive Micromachined Ultrasonic Transducers*

Examiner: DICKENS, CHARLES

Art Unit: 2855

**RESPONSE/AMENDMENT**

Date: October 17, 2002

**CERTIFICATE OF MAILING**

I hereby certify that this document or fee is being deposited with the United States Postal Service as First Class Mail addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on October 17, 2002.

SIGNED: Claudia Galik  
Claudia Galik

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

This is in response to the Office Action mailed July 9, 2002.

**REMARKS**

Certain claims of the application are being rejected under 35 U.S.C. 102(b) as being anticipated by the admitted prior art (APA). The only admitted prior art are Figures 1 and 2, not Figure 4 as indicated by the Examiner. Figure 1 does not show a microchannel. Rather Figure 1 shows a single cell of an ultrasonic transducer. The cell includes a substrate which can be silicon and a membrane spaced above the substrate and supported by amorphous silicon 13. The transducer operates by applying voltages between the substrate 11 and the membrane 12 to cause the membrane to vibrate and generate ultrasonic waves. The interior volume 14 is usually vacuum sealed. A transducer may comprise a plurality of such cells as shown in Figure 2. There is no showing in Figure 1 of a microchannel or microgroove oriented over the transducer. In Figure 4 to which the Examiner makes reference, a transducer of the type discussed with regard to Figures 1 and 2 (transducer 27) is located on one wall of a microchannel 21, shown more clearly in Figure 3, as extending lengthwise.

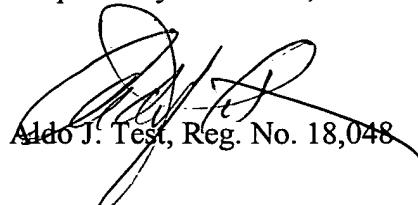
The second grounds for rejection is based upon the Degertekin et al. Patent 6,070,468. Applicant has carefully studied this patent and is unable to find a teaching anywhere in the patent

of a capacitive micromachined ultrasonic transducer integrated into a microchannel. Furthermore, Applicant is unable to find a teaching of a microchannel. It is submitted, therefore, that the claims are patentable over the art cited in view of the fact that the art does not disclose the combination of fluidic microchannels and of capacitive micromachined ultrasonic transducers.

In view of the above, favorable action is respectfully requested.

The Commissioner is hereby authorized to charge any other fees determined to be due to Deposit Account 50-2319 (Order No. A-69570/AJT).

Respectfully submitted,



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